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09/772,444

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Nidzara Dellien

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EXAMINER

JACKSON, JAKIEDA R

ART UNIT

PAPER NUMBER

2655

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/772,444

Applicant(s)

DELLIEN ET AL.

Examiner

Jakieda R Jackson

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 35-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 35-41 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-5 and 5A.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. In response to the restriction requirement set forth in the Office Action mailed March 8, 2004, the examiner acknowledges that the applicant elected claims 1-12, 13-20 and 35-41 without traverse (Paper No. 7).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 37 and 38** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 37**, the ambiguous term "losslessly inter-frame redundancy" is not defined in the specification. Therefore, the claim is vague and indefinite.

Claim 38 is rejected because it does not cure the problem with claim 37.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-2, 4, 6, 9-14, 16-20, 35 and 37-41** are rejected under 35 U.S.C. 103(a) as being anticipated by Mekuria et al. (SE 9 800 831 A, Ericsson Telefon AB L M, Communication Device and Method of Operation), hereinafter referenced as Mekuria, in view of Dobson et al. (U.S. Patent No. 5,819,215), hereinafter referenced as Dobson.

Regarding **claims 1 and 13**, Mekuria discloses a communication apparatus and method comprising:

an encoder (figure 1, element 103) for encoding a signal (page 7, lines 27-29);
a code compression unit (figure 1, element 104), coupled to the encoder, for compressing the encoded signal using a lossy scheme (page 7, lines 29-32 and page 14, lines 10-23); and

a memory (figure 1, element 116), coupled to an output of the code compression unit, for storing the compressed encoded signal (page 9, lines 10-14), but lacks compressing the encoded signal using a lossless scheme.

Dobson discloses a compression apparatus and method (data compressor; figure 2, element 32) for compressing the encoded signal (abstract) using a lossless as

well as a lossy scheme (column 12, lines 3-10), to receive a compact representation of the reconstructed signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that it compresses the encoded signal using a lossless scheme, to achieve a compact representation while minimizing distortion of the reconstructed output signal as taught by Dobson (column 12, lines 10-13).

Regarding **claims 2 and 14**, Mekuria discloses an apparatus and method further comprising:

a code decompression unit (figure 1, element 109), coupled to the memory, for decompressing the stored signal using a lossy scheme (page 10, line 18 and page 10, line 28 – page 11, line 17);

a decoder (figure 1, element 110), coupled to the code decompression unit, for decoding the decompressed signal (page 8, lines 33-36); and

outputting the decoded signal (page 6, line 36 – page 7, line 2) but lacks decompressing the stored signal using a lossless scheme.

Dobson discloses decompressing the stored signal using a lossless scheme (column 12, lines 41-53), to reverse the lossless compression performed by compression.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that it compresses the

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encoded signal using a lossless scheme, to achieve compression while retaining high subjective quality of the reconstructed or decompressed signal (abstract).

Regarding **claims 4 and 16**, Mekuria discloses an apparatus and method of the encoding a signal having high inter-frame redundancy (column 10, lines 1-7) but lacks wherein the lossless scheme is used to compress parameters.

Dobson discloses an apparatus and method wherein the lossless scheme is used to compress parameters (column 12, lines 7-9), to receive a compact representation of the reconstructed signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that it compresses the encoded signal using a lossless scheme, to achieve a compact representation while minimizing distortion of the reconstructed output signal (column 12, lines 10-13).

Regarding **claims 6, 18 and 39**, Mekuria discloses an apparatus and method wherein the lossy scheme is used to compress some parameters of the encoded signal having low inter-frame redundancy (crucial bits; page 10, lines 1-7).

Regarding **claim 9**, Mekuria discloses an apparatus and method further comprising a switch (figure 3, element 323) that enables an encoded signal received by a receiver to be compressed by the code compression unit and stored in the memory (abstract; page 11, line 19 – page 12, line 11).

Regarding **claim 10**, Mekuria discloses an apparatus and method further comprising a switch (figure 4, element 424) that enables the stored signal to be

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decompressed by the decompression unit and output from a transceiver (abstract; page 4, lines 7-14 and page 12, line 13 – page 13, line 8).

Regarding **claim 11**, Mekuria discloses an apparatus and method further comprising an operator interface unit (page 9, lines 10-14).

Regarding **claim 12**, Mekuria discloses an apparatus and method wherein the apparatus is a mobile telephone (mobile phone; page 14, lines 25-28) or a communication device (abstract; figure 1, element 100 and page 6, lines 20-22).

Regarding **claim 35**, Mekuria in view of Fallon discloses an apparatus and method for decompressing a signal as mentioned in claim 2, in addition comprises the steps of:

decompressing, within a decompressing unit (109), a compressed encoded digital signal using a lossy scheme (page 7, lines 29-32 and page 14, lines 10-23);

decoding, within a decoder (110), the decompressed signal (page 8, lines 33-36);
and

outputting the decoded signal (page 6, line 36 – page 7, line 2), but lacks decompressing a compressed encoded digital signal using a both a lossy and lossless scheme.

Dobson discloses an apparatus and method for decompressing a compressed encoded digital signal using a both a lossy and lossless scheme (abstract and column 12, lines 7-9), to receive a compact representation of the reconstructed signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that it compresses the

digital encoded digital signal using both a lossy and lossless scheme, to achieve a compact representation while minimizing distortion of the reconstructed output signal (column 12, lines 10-13).

6. **Claims 3, 15 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mekuria in view Dobson in further view of Kroon (U.S. Patent No. 5,664,055).

Regarding **claims 3, 15 and 36**, Mekuria discloses a communication apparatus and method but lacks wherein the quality of the signal is decompressed using the lossy scheme and is improved by changing weighting factors and a tilt factor in a post filter.

Dobson discloses the apparatus and method wherein the quality of the signal is decompressed using a lossy and lossless scheme (abstract and column 12, lines 7-9), to receive a compact representation of the reconstructed signal but lacks the method of changing weighting factors and a tilt factor in a post filter.

Kroon discloses an apparatus and method of changing weighting factors (adjusting weighting variable) and a tilt factor (spectral envelope tilted) in a post filter (column 8, lines 36-37 and column 27, lines 58-67), to enhance the reconstructed speech signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that it changes weighting factors and a tilt factor in a post filter, to improve the performance for input signals with a flat frequency-response (column 8, lines 53-54).

7. **Claims 5 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mekuria in view of Gao (Publication Number US 2002/0103638).

Regarding **claims 5 and 17**, Mekuria discloses a communication apparatus and method wherein the parameters of the encoded signal having high inter-frame redundancy (non-crucial bits; page 10, lines 1-7) includes coefficients of a long term filter (long term prediction; page 7, lines 35-38) but lacks codebook gains.

Gao discloses an apparatus and method wherein the parameters of the encoded signal (encode speech signals; abstract and column 2, paragraph 0035) having high inter-frame redundancy (full-rate speech coder algorithm; column 3, paragraph 0061 and column 10, paragraph 0143) includes coefficients of a long term filter and codebook gains (column 3, paragraph 0059-0061), to produce synthesized speech.

Although Gao does not specifically discloses high inter-frame redundancy, the applicant acknowledges that a GSM system using a full-rate speech coder comprising bits of which are considered to be crucial (highest priority level; page 30, lines 1-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that the encoded high inter-frame redundancy signal have including coefficients of a long term filter and codebook gains, to improve the use of communication systems employing codebooks by utilizing several predictions to capture redundancy in voiced speech while minimizing data to encode speech (column 2, paragraph 0035).

8. **Claims 7-8, 19-20 and 40-41** are rejected under 35 U.S.C. 103(a) as being unpatentable Mekuria in view of Dobson in further view of Crupi et al. (U.S. Patent No. 6,195,636), hereinafter referenced as Crupi.

Regarding **claims 7, 19 and 40**, Mekuria discloses a communication apparatus and method wherein the parameters of the encoded signal have low inter-frame redundancy (crucial bits; page 10, lines 1-7) but lacks that the encoded signal is compressed to include fixed codebook indices.

Crupi discloses that the encoded signal (encoded speech) is compressed (compressed) to include fixed codebook indices (implied in column 4, lines 16-17), to achieve efficiency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that the encoded signal is compressed to include fixed codebook indices, to achieve efficiency by saving transmission bits.

Regarding **claims 8, 20 and 41**, Mekuria discloses an apparatus and method wherein the parameters of the encoded signal have low inter-frame redundancy (crucial bits; page 10, lines 1-7), but lacks that the encoded signal is not compressed to include adaptive codebook indices.

Crupi discloses that the encoded signal is not compressed (not compressed) to include adaptive codebook indices (implied in column 4, lines 16-17), to prevent losses.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mekuria's invention such that the encoded signal is not compressed to include adaptive codebook indices, to save transmission bits.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Fallon (U.S. Patent No. 6,309,424) discloses a content independent data compression method and system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on 703. 306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ

May 21, 2004



TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER